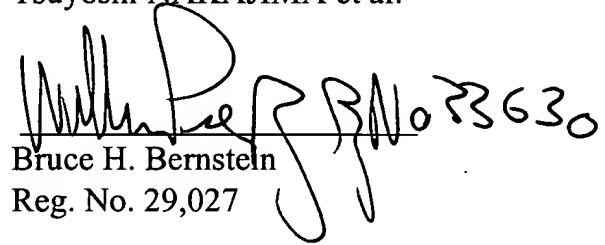P20987.A02

amendment have been made for a purpose unrelated to patentability, and no estoppel should

be deemed to attach to these claims.

If there should be any questions, the Examiner is invited to contact the undersigned

at the telephone number listed below.

Respectfully submitted,
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MARKED-UP COPY OF AMENDED CLAIMS

1. (Amended) A method for detecting a defect on an object having a plurality of like projected portions formed [in the same shape] along an arc with a predetermined pitch, the method comprising [the steps of]:

determining an arc circumscribing a tip of each projected portion of [an] the object to be inspected[,];

[extracting each] identifying overlapping [region] regions formed by an overlapping portion between an inner portion of a region defined by [said] the arc and a cut-away portion of [said] the object [to determine] and determining an area of each of the overlapping [region,]regions;

comparing the area of each of [said] the overlapping regions with [each] the areas of the other overlapping regions to determine an area difference for each of the overlapping regions;[,] and

determining that no defect exists on [said] the object [if each] when the area difference [falls] of each of the overlapping regions is within a range of predetermined criteria, [whereas] and determining that a defect exists on [said] the object [if said] when the area difference [exceeds] is outside the range of [the] predetermined criteria.

2. (Amended) A system for detecting a defect on an object having a plurality of like projected portions formed [in the same shape] along an arc with a predetermined pitch, the system comprising:

an imaging [means for imaging an] system that images the object to be inspected[,];

an image capture [means for holding an picked-up] system that stores the image as digital data[,];

a region area detection [means for analyzing] system that analyzes the digital data [held] stored by [said] the image capture [means] system to determine an arc circumscribing a tip of each of the plurality of projected [portion] portions of [said] the object, [and then extracting each] identifies overlapping [region] regions formed [by an overlapping portion] between an inner portion of a region defined by [said] the arc and a cut-away portion of [said] the object [to determine], and determines an area of each of the overlapping [region,] regions;

a region area comparison [means for comparing] system that compares the area of each of the overlapping [region] regions determined by [said] the region area detection [means] system with the areas of each of the other [to determine] overlapping regions and determines an area difference[,]; and

a defect determination [means for determining] system that determines that no defect exists on [said] the object [if] when the area difference of each of the overlapping regions determined by [said] the region area comparison [means falls] system is within a range of predetermined criteria, [whereas determining] and determines that a defect exists on [said] the object [if said] when the area difference [exceeds] is outside the range of [the] predetermined criteria.

3. (Amended) A method for detecting a defect on an object having a plurality of like projected portions formed [in the same shape] along an arc with a predetermined pitch, the method comprising [the steps of]:

determining an arc [inscribing] circumscribing a tip of each projected portion of [an] the object to be inspected[,];

[extracting each] identifying overlapping [region] regions formed by an overlapping portion between an outer portion of a region defined by [said] the arc and a cut-away portion of [said] the object [to determine] and determining an area of each of the overlapping [region,]regions;

comparing the area of each of [said] the overlapping regions with [each] the areas of the other overlapping regions to determine an area difference for each of the overlapping regions;[,] and

determining that no defect exists on [said] the object [if each] when the area difference [falls] of each of the overlapping regions is within a range of predetermined criteria, [whereas] and determining that a defect exists on [said] the object [if said] when the area difference [exceeds] is outside the range of [the] predetermined criteria.

4. (Amended) A system for detecting a defect on an object having a plurality of like projected portions formed [in the same shape] along an arc with a predetermined pitch, the system comprising:

an imaging [means for imaging an] system that images the object to be inspected[,];

an image capture [means for holding an picked-up] <u>system that stores the</u> image as digital data[,]<u>;</u>

<u>a</u> region area detection [means for analyzing] <u>system that analyzes</u> the digital data [held] <u>stored</u> by [said] <u>the</u> image capture [means] <u>system</u> to determine an arc circumscribing a tip of each of the <u>plurality of</u> projected [portion] <u>portions</u> of [said] <u>the</u> object, [and then extracting each] <u>identifies</u> overlapping [region] <u>regions</u> formed [by an overlapping portion] between an outer portion of a region defined by [said] <u>the</u> arc and a cut-away portion of [said] <u>the</u> object [to determine]<u>, and determines</u> an area of each <u>of the</u> overlapping [region,] <u>regions;</u>

<u>a</u> region area comparison [means for comparing] <u>system that compares</u> the area of each <u>of the</u> overlapping [region] <u>regions</u> determined by [said] <u>the</u> region area detection [means] <u>system</u> with <u>the areas of</u> each <u>of the</u> other [to determine] <u>overlapping regions and determines</u> an area difference[,]<u>;</u> and

<u>a</u> defect determination [means for determining] <u>system that determines</u> that no defect exists on [said] <u>the</u> object [if] <u>when</u> the area difference <u>of each of the overlapping regions</u> determined by [said] <u>the</u> region area comparison [means falls] <u>system is</u> within a range of predetermined criteria, [whereas determining] <u>and determines</u> that a defect exists on [said] <u>the</u> object [if said] <u>when the</u> area difference [exceeds] <u>is outside</u> the range of [the] predetermined criteria.

5. (Twice Amended) The system for detecting a defect on an object [having projected

portions formed in the same shape along an arc with a predetermined pitch,] according to claim 2, further comprising a lighting box [for placing]. on which the inspected object [thereon] is placed, [said] the imaging [means] system being [arranged] positioned opposite to an illuminating surface of the lighting box.

6. (Amended) The system for detecting a defect on an object [having projected portions formed in the same shape along an arc with a predetermined pitch,] according to claim 5, wherein [said] the imaging [means is provided with] system comprises a band pass filter [for eliminating, as deleterious light,] that filters out light having wavelengths other than [those] the wavelengths of light [for said] used by the lighting box to illuminate the object [with].

7. (Amended) The system for detecting a defect on an object [having projected portions formed in the same shape along an arc with a predetermined pitch,] according to claim 4, further comprising a lighting box [for placing]. on which the inspected object [thereon] is placed, [said] the imaging [means] system being [arranged] positioned opposite to an illuminating surface of the lighting box.

8. The system for detecting a defect on an object [having projected portions formed in the same shape along an arc with a predetermined pitch,] according to claim 7, wherein [said] the imaging [means is provided with] system comprises a band pass filter [for eliminating, as deleterious light,] that filters out light having wavelengths other than [those] the wavelengths of light [for said] used by the lighting box to illuminate the object [with].